FW

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,459	08/03/2001	G. Herbert Lin	3123-373	1375

32093 7590 11/01/2005

HANSRA PATENT SERVICES
4525 GLEN MEADOWS PLACE
BELLINGHAM, WA 98226

EXAMINER	
RODRIGUEZ, GLENDA P	
ART UNIT	PAPER NUMBER
2651	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	✓09/922,459	LIN ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-100* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-35,56-60 and 96-100* is/are allowed.

6)☒ Claim(s) *1-4,6-12,14-20,36-43,47-52,61-63,65-68,70-73,75-77 and 81-95* is/are rejected.

7)☒ Claim(s) *5,13,44-46,53-55,64,69,74 and 78-80* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)✓☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Specification

1. Claims 83, 88 and 93 are objected to because of the following informalities: "servo information is automatic gain control" is not clear (Automatic Gain Control is a component in a disk device and Servo Information contains servo data that pertains to the servo parameters of the user data in the disk.). Appropriate correction and/or clarification is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, 6-11, 14, 14-20, 37-40, 43, 47-52, 61-63, 66-68, 71-73, 76, 77, 81, 82, 86, 87, 91 and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alex in view of Quak et al. (US Patent No. 6, 633, 442).

Regarding Claims 1 and 11, Sacks et al. teach a method for providing an early warning of thermal decay, comprising:

> Writing a test pattern to a magnetic disk and a location on said magnetic disk having a greater than average susceptibility to thermal decay (Col. 2, Lines 5-15 and Lines 42-43 and Col. 6, Line 1-7 and Col. 10, Lines 3-10. Alex teaches data tracks being written in the medium and being analyzed by a test circuit, therefore, the tracks being used are tested and considered a test track with a particular test pattern being analyzed by the circuit. Alex further teaches wherein this procedure

is done in an area of high areal density (i.e. data density) and wherein spontaneity degradation (for example, a location on magnetic disk having a greater susceptibility of thermal decay as claimed by the applicant).);

Measuring an amplitude of a signal produced by reading said test pattern (Col. 2, 43-44. Alex teaches that it measures the amplitude of the read-back signal.);

Storing said measured amplitude (Col. 2, Lines 45-47. Alex teaches that it stores a measured fraction of the amplitude read-back signal.);

Reading said test pattern to obtain an observed amplitude of a signal produced by said test signal (Col. 6, Lines 25-27);

Comparing said measured amplitude to said observed amplitude (Col. 2, Lines 46-50 and Col. 6, Lines 15-23. Alex teaches that after a certain period it re-reads the data in order to verify (i. e. compare) if the data needs to be refreshed.);

And producing a thermal decay-warning signal if said comparison is unfavorable (Col. 2, Lines 49-55. Alex teaches that if the comparison falls below a certain threshold, it sends a signal to the controller indicating to switch indicating a thermal decay in order to refresh the signal. Therefore, such actions have been interpreted as a warning conditions or functions with an association of a warning signal for aborting the system to refresh the signal. See also Col. 5, Lines 7-67, wherein Alex defines its interpretation of thermal decay according to page 2, Line 11 to Page 3, Line 15 of the specification.).

However, Alex does not explicitly teach wherein the tracks have differing track densities per zone. Quak et al. teaches the use of zone bit recording, in which differing data densities are

recorded into different zones in order to optimize the capacity of the drive (Col. 2, L. 44 to Col. 3, L. 52 of Quak et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Alex's invention with the teaching of Quak et al. in order to achieve a desired capacity.

Regarding Claims 36 and 47, Alex teach a hard disk drive, comprising:

A base (It is a well known element to the artisan in the art that a base is a part of a drive structure (i.e. chassis).);

A magnetic storage disk comprising a magnetic storage material and a plurality of data tracks (Fig. 7, Element 12);

A transducer head for reading and writing information to said data tracks, wherein said information comprises at least a first test pattern, and wherein said transducer head is movable in radial direction with respect to said disk to address a selected one of said plurality of data tracks (Fig. 7, Element 43. It is obvious that a transducer moves radially throughout the disk.);

A voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks (Fig. 7, Element VCM);

A controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks (Fig. 7, Element 11 and Col. 6, Lines 46-65. The micro-controller is interconnected with the Digital Signal Processor, which is connected to the Positioning driver, which controls the position of the transducer throughout its movement.)

A channel, interconnected to said transducer head, wherein an amplitude of a signal derived from said at least a first test pattern encoded in said at least a first of said plurality of data tracks and read from said at least a first of said plurality of data track is transmitted by said channel (Col. 3, Lines 5-10), and wherein a thermal decay warning signal is generated if said amplitude of said signal derived from said at least a first test pattern is less than a reference amplitude (Col. 2, Lines 49-55. Alex teaches that if the comparison falls below a certain threshold, it sends a signal to the controller indicating to switch indicating a thermal decay in order to refresh the signal. Therefore, it would have been obvious to know that some sort of signal must be sent to the apparatus to warn the occurrence of thermal decay.).

Although Alex teaches determining thermal decay in a disc drive, Alex does not explicitly teach writing a test pattern in a area of greater susceptibility of an error being detected (e.g. thermal decay). Quak et al. teaches writing different test patterns in which its optimum capacity is being measured by changing the data density (Col. 2, L. 44 to Col. 3, L. 52, Quak further explains that if the data density is too high, the medium will detect an error in the performance and therefore decrease this data density. Hence, Quak et al. teaches that by increasing the data density too much, it has greater susceptibility to an error than if written at a lower data density. In the Specification of the Application in Page 5, L. 5-16, wherein it teaches that by attempting to write to a smaller volume more data, it makes the medium susceptible to thermal decay.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Alex's invention with the teaching of Quak et al. in order to achieve a desired capacity.

Method claims (61, 66, 71, 76, 81, 86 and 91) are drawn to the method of using the corresponding apparatus claimed in claims (36 and 47). Therefore method claims (61, 66, 71, 76, 81, 86 and 91) correspond to apparatus claims (36 and 47) and are rejected for the same reasons of obviousness as used above.

Regarding Claims 2, 43 and 52, the combination of Alex and Quak et al. teaches all the limitations of Claims 1, 36 and 47, respectively. Quak et al further teaches writing information to at least a track of said magnetic disk with a test frequency, wherein said first frequency is higher than a nominal frequency than a user data frequency (Col. 2, L. 44 to Col. 3, L. 52 of Quak et al.).

Regarding Claims 4, 14, 37 and 48, the combination of Alex and Quak et al. teaches all the limitations of Claims 1, 11, 36 and 47, respectively. Alex further teaches identifying a sector of said magnetic disk at which a magnetic medium comprising an information storing portion of said magnetic disk is thinner than an average magnetic medium thickness of said magnetic disk, and then writing a test pattern to the sector when identified (Col. 5, Lines 7-40. Alex teaches an embodiment of its invention wherein the change the bit spacing and according to Alex, if the bit spacing is changed, the film thickness obviously changed.).

Regarding Claims 6 and 16, the combination of Alex and Quak et al. teaches all the limitations of Claims 1 and 11, respectively. Alex further teaches that in response to a thermal decay-warning signal, refreshing data stored on the magnetic disk (Col. 2, Lines 49-55. Alex teaches that if the comparison falls below a certain threshold, it sends a signal to the controller indicating to switch indicating an thermal decay in order to refresh the signal.).

Regarding Claims 7 and 17, the combination of Alex and Quak et al. teaches all the limitations of Claims 1 and 11, respectively. Alex further teaches wherein the test pattern is written to each data storage surface of each magnetic disk included in a hard drive (Col. 2, Lines 42-43 and Col. 6, Line 1-7 and Col. 10, Lines 3-10. Alex teaches data tracks being written in the medium and being analyzed by a test circuit, therefore, the tracks being used are tested and considered a test track with a particular test pattern being analyzed by the circuit. Alex teaches in an invention one disk wherein it records at least one test pattern.).

Regarding Claims 8 and 18, the combination of Alex and Quak et al. teaches all the limitations of Claims 1 and 11, respectively. Alex further teaches wherein said steps of reading said test pattern, comparing said measured amplitude, and producing the thermal decay warning signal are performed periodically (Col. 2, Line 66 to Col. 3, Line10).

Regarding Claims 9, 19 and 40, the combination of Alex and Quak et al. teaches all the limitations of Claims 1, 11 and 36, respectively. Alex further teaches creating a predetermined portion of a magnetic disk having a greater than average susceptibility to thermal decay during manufacture of said magnetic disk, the test pattern to said predetermined portion of said magnetic disk in response to the identification of that predetermined portion (Col. 2, Lines 10-15 and Col. 2, Lines 42-43 and Col. 6, Line 1-7 and Col. 10, Lines 3-10. Alex teaches data tracks being written in the medium and being analyzed by a test circuit, therefore, the tracks being used are tested and considered a test track with a particular test pattern being analyzed by the circuit. Alex teaches in an invention one disk wherein it records at least one test pattern.).

Regarding Claim 10, the combination of Alex and Quak et al. teaches all the limitations of Claims 1, respectively. Alex further teaches that the data is written according to a longitudinal scheme (Col. 11, Lines 47-49).

Regarding Claim 20, the combination of Alex and Quak et al. teaches all the limitations of Claim 11. Alex further teaches that the data is written according to a perpendicular scheme (Col. 11, Lines 47-49).

Regarding Claim 38, the combination of Alex and Quak et al. teaches all the limitations of Claim 37. Alex fails to teach wherein said prescribed amount has a thickness that is less than about 90% of an average thickness of said magnetic storage material. One of ordinary skill in the art would have been motivated to have had less than about 90% since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding Claim 39, the combination of Alex and Quak et al. teach all the limitations of Claim 37. Alex further teach wherein said magnetic storage disk is formed having a magnetic storage material thickness that is intentionally reduced in said area of said magnetic storage disk (Col. 5, Lines 7-40. Alex teaches an embodiment of its invention wherein the change the bit

spacing and according to Alex, if the bit spacing is changed, the film thickness obviously changed.).

Regarding Claim 49, the combination of Alex and Quak et al. teaches all the limitations of Claim 48. Alex further teaches wherein said area of said magnetic storage disk comprising data track and comprising said magnetic storage thickness is formed at a predetermined location on said magnetic storage disk. (Col. 5, Lines 7-40. Alex teaches an embodiment of its invention wherein the change the bit spacing and according to Alex, if the bit spacing is changed, the film thickness obviously changed It would have been obvious to an artisan in the art to know that if it performs an embodiment in a predetermined area of the disk.).

Regarding Claims 50 and 51, the combination of Alex and Quak et al. teaches all the limitations of Claim 49. Alex further teaches wherein said hard disk drive stores data according to a longitudinal recording scheme, and said predetermined location is towards an inside/outside diameter of the disk. (Col. 5, Lines 7-40. Alex teaches an embodiment of its invention wherein the change the bit spacing and according to Alex, if the bit spacing is changed, the film thickness obviously changed It would have been obvious to an artisan in the art to know that if it performs an embodiment in a predetermined area of the disk.).

Regarding Claims 62, 67, 72, 77, 82, 87 and 92, the combination of Alex and Quak et al. teach all the limitations of Claims 61, 66, 71, 81, 86 and 91, respectively. The combination further teach wherein the test pattern has greater susceptibility to error than any other servo or user data (Quak et al. teaches writing different test patterns in which its optimum capacity is being measured by changing the data density. See Col. 2, L. 44 to Col. 3, L. 52, Quak further explains that if the data density is too high, the medium will detect an error in the performance

and therefore decrease this data density. Hence, Quak et al. teaches that by increasing the data density too much, it has greater susceptibility to an error than if written at a lower data density. In the Specification of the Application in Page 5, L. 5-16, wherein it teaches that by attempting to write to a smaller volume more data, it makes the medium susceptible to thermal decay.).

Regarding Claims 63, 68 and 73, the combination of Alex and Quak et al. teach all the limitations of Claims 61, 66 and 71, respectively. The combination further teach wherein the test pattern on the track has a higher susceptibility to thermal decay due to different data density (e.g. larger or smaller (Quak et al. teaches writing different test patterns in which its optimum capacity is being measured by changing the data density. See Col. 2, L. 44 to Col. 3, L. 52, Quak further explains that if the data density is too high, the medium will detect an error in the performance and therefore decrease this data density. Hence, Quak et al. teaches that by increasing the data density too much, it has greater susceptibility to an error than if written at a lower data density. In the Specification of the Application in Page 5, L. 5-16, wherein it teaches that by attempting to write to a smaller volume more data, it makes the medium susceptible to thermal decay.).

4. Claims 3, 41, 42, 65, 70 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alex and Quak et al. as applied to claim 2 above, and further in view of Emo et al. (US Patent No. 6, 091, 559).

Regarding Claims 3, 41 and 42, the combination of Alex and Quak et al. teaches all the limitations of Claims 2 and 36, respectively. The combination does not explicitly teach wherein the track located within a first zone in the disk, said test frequency is a nominal frequency for a user data in a second zone of the disk, and the first zone is located towards an inside diameter relative to said second zone. However, this feature is well known in the art as disclosed by Emo

et al., wherein it teaches a disk divided in a plurality of zones, each zone with its own recording frequency (Pat. No. 6, 091, 559; Col. 18, L. 20-41. Emo teaches that each zone has its own frequency in order to optimize head to disc performance when performing read/write operations.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Emo et al. in order to provide different frequencies in the zones in order to optimize head to disk performance (Col. 17, Lines 53 to Col. 18, L. 41).

Regarding Claim 65, 70 and 75, the combination of Alex and Quak et al. teach all the limitations of Claims 61, 66 and 75, respectively. However, the combination does not explicitly teach wherein the disk includes the first and second zone, the track located in the first zone, and the test pattern has the same data density as user data in the second zone (Col. 18, L. 20-41. Emo teaches that each zone has its own frequency in order to optimize head to disc performance when performing read/write operations. But the overall data density in the disk is the same as mentioned n the Summary of the Invention of Emo et al.).

5. Claims 83, 88 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alex and Quak et al. as applied to claim 82, 87 and 92 above, and further in view of Young (US Patent No. 6, 445, 525). The combination of Alex and Quak et al. teach all the limitations of Claims 82, 87 and 92, respectively. However, the combination does not explicitly teach wherein the servo information is automatic gain control. Young et al. teaches that the servo information area contains an automatic gain control field in Fig. 4, Element 254. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the

combination's invention with the teaching of Young in order to control the read channel elements.

6. Claims 84, 85, 89, 90, 94 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alex and Quak et al. as applied to claims 81, 86 and 91 above, and further in view of Ishida et al. (US Patent No. 6, 347, 016).

Regarding Claims 84, 89 and 94, the combination of Alex and Quak et al. teach all the limitations of Claims 81, 86 and 91, respectively. However, the combination does not explicitly teach wherein the film thickness is varied in the sector areas of the disk. Ishida et al. teaches in Fig. 2 Howe the medium film thickness, Element 22, is varied according to the sector protruding portions. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Ishida et al. in order to be able to make an embossed pattern in the disk.

Regarding Claims 85, 90 and 95, the combination of Alex and Quak et al. teach all the limitations of Claims 81, 86 and 91, respectively. However, Alex and Quak et al. does not further teach wherein making (i.e. manufacturing) a medium with different thickness in the film. Ishida et al. does teach a disk that has been made or manufactured to have different thickness as shown in Fig. 2, Element 22.

Allowable Subject Matter

7. Claims 5, 13, 44-46, 53-55, 64, 69, 74, and 78-80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 5, the primary reason for allowable subject matter is the inclusion of the limitation wherein identifying the sector by measuring the amplitude of the AGC field wherein the identified sector is associated with one of the AGC fields producing an amplitude that is less than nominal amplitude for the AGC fields.

Regarding Claim 13, the primary reason for allowable subject matter is the inclusion of the limitation wherein the track is located in first zone, the test frequency is a nominal data frequency for user data in a second zone of the magnetic disk and the first zone is located towards the outside diameter of the disk in relation to the second zone.

Regarding Claims 44, the primary reason for allowable subject matter is the inclusion of the limitation wherein the test pattern frequency has a test frequency in the data track that is less than a nominal frequency of the user data in the user track.

Regarding Claims 45 and 53, the primary reason for allowable subject matter is the inclusion of the limitation wherein the test pattern comprises a 12T pattern or greater.

Regarding Claims 46 and 54, the primary reason for allowable subject matter is the inclusion of the limitation wherein the test pattern comprises a 24T pattern or greater.

Regarding Claim 55, the primary reason for allowable subject matter is the inclusion of the limitation wherein the test pattern comprises a 12T pattern and a 24T pattern.

Regarding Claims 64, 69, 74 and 78, the primary reason for allowable subject matter is the inclusion of the limitation wherein the test pattern has a higher susceptibility to thermal decay than a 1T pattern on the track due to the test pattern on the track having a different data density that the 1T pattern on the track.

8. Claims 21-35, 56-60 and 96-100 are allowed.

The following is an examiner's statement of reasons for allowance:

The reasons for allowance in Claims 21-35 are in the previous Office Action dated 1/10/05.

Regarding Claim 56, the primary reason for allowance is the inclusion of the limitation wherein writing a test pattern having a greater susceptibility to thermal decay than a 1T pattern to a magnetic storage medium.

Regarding Claim 96, the primary reason for allowance is the inclusion of the limitation wherein the step of selecting a test pattern from the evaluation test patterns that exhibits the greatest amounts of thermal decay.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 1-100 have been considered but are moot in view of the new ground(s) of rejection due to the newly amended Claims.

Examiner acknowledges that Claims 54-100 have been added to the Applicant's Amendment filed on 7/27/05.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gpr

October 18, 2005.

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600